REMARKS

Favorable reconsideration of the application is respectfully requested in light of the amendments and remarks herein.

Upon entry of this amendment, claims 1-21 will be pending. By this amendment, claims 1-8, 11-15, and 18-21 have been amended. No new matter has been added.

§112 Rejection of Claims 4, 11, and 18

In Section 3 of the Office Action, claims 4, 11, and 18 have been rejected under 35 U.S.C. §112, second paragraph. Claims 4, 11, and 18 have been amended to obviate the rejection.

§103 Rejection of Claims 1, 2, 5-9, 12-16, 19-21

In Section 5 of the Office Action, claims 1, 2, 5-9, 12-16, 19-21 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Shikakura (U.S. Patent No. 5,594,598) in view of Owashi *et al.* (U.S. Patent No. 5,903,704; hereinafter referred to as "Owashi").

In the Background section of the Specification, it was indicated that "[w]hen audio data is encrypted corresponding to DES (Data Encrypting Standard), after audio data is compressed, it is encrypted. Since an encrypting key used in the encrypting process has around 64 bits (= 56 bits + 8 bits (CRC) (thus, 8 bytes)), when audio data is encrypted with the 64-bit key, because of the data unit of the compressing process, fractions take place. For example, in the case of audio data of an MD, since 212 / 8 = 26.5, when the encrypting process is performed 27 times, data becomes insufficient." *Specification, page 3, line 19 to page 4, line 1.*

To compensate for the data insufficiency, dummy data can be added. "However, a data loss of around 2 % (4 / 212 = 0.019) takes place. When 215 bytes are selected as the compression data unit, dummy data of seven bytes is required. The data loss amounts to around 3.3 % (7 / 215 = 0.0326). When a memory card of 64 Mbytes is used, the data loss of 3.3 % is equivalent to data of 2.1 Mbytes. At the present time, such a data loss is a critical problem in such an expensive memory card." *Specification, page 4, lines 4-12.* Although the data loss problem with dummy data can be alleviated somewhat by using the dummy data "as sub-data having secondary information, since it is [difficult] to manage dispersed data, this method will not be effective". *Specification, page 4, lines 13-16.*

The structure of independent claim 1, as presented herein, is configured to overcome the above-described problem by providing a non-volatile recording medium for recording a digital audio signal comprising:

> a block-segmenting element to segment the digital audio signal
> > into a plurality of blocks, each block having a predetermined
> > data length selected to provide a maximum recordable time on
> > the recording medium and a maximum encryptable data length
> > of the digital audio signal; and
> a compressor to compress the digital audio signal at a compression
> > ratio selectable in a predetermined range.

Claim 1 (emphasis added).

Therefore, the above-described data insufficiency and fraction problem in the encryption process can be overcome by segmenting the audio signal into a plurality of blocks, where each block is of a predetermined length, and by compressing the segmented signal at a predetermined range of compression ratio. The predetermined length of the block is selected to provide a

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maximum recordable time on the recording medium and a maximum encryptable data length of the digital audio signal.

Shikakura discloses "coding means [for] compressing the information at a compression ratio which is variable and outputting the compressed information, ... [and] controlling means for controlling the compression ratio of the coding means". *Shikakura, column 2, lines 28-36.* However, Shikakura fails to teach or suggest a block segmenting element configured to segment the audio signal into a plurality of blocks, where each block is of a predetermined length selected to provide a maximum recordable time on the recording medium and a maximum encryptable data length of the digital audio signal. It was indicated that Owashi teaches encrypting compressed audio signal.

Therefore, Shikakura and Owashi, in combination or individually, fail to teach or suggest a block segmenting element configured to segment the audio signal into a plurality of blocks, where each block is of a predetermined length selected to provide a maximum recordable time on the recording medium and a maximum encryptable data length of the digital audio signal.

Independent claims 8 and 15 are method and apparatus claims, respectively, including limitations that closely parallel, and are substantially similar to, the limitations of independent claim 1. Since claims 2, 5-7, 9, 12-14, 16, and 19-21 depend from claims 1, 8, or 15, it is maintained that claims 2, 5-7, 9, 12-14, 16, and 19-21 include all the limitations of claims 1, 8, or 15.

Based on the foregoing discussion, it is submitted that claims 1, 2, 5-9, 12-16, 19-21 are not rendered obvious by the teachings of Shikakura and Owashi, individually or in combination. Accordingly, it is submitted that the Examiner's rejection of claims 1, 2, 5-9, 12-16, 19-21 based

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upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

§103 Rejection of Claims 3, 10, and 17

In Section 6 of the Office Action, claims 3, 10, and 17 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Shikakura in view of Owashi, and further in view of Takahashi et al. (U.S. Patent No. 6,453,120; hereinafter referred to as "Takahashi").

Since claims 3, 10, and 17 depend from claims 1, 8, and 15, respectively, claims 3, 10, and 17 include all the limitation of claims 1, 8, and 15. Based on the foregoing discussion regarding claims 1, 8, and 15, claims 3, 10, and 17 should be allowable over the combination of Shikakura and Owashi. Further, it was indicated that Takahashi discloses compression rate selectable from among, for example, 1/4, 1/8, 1/16, and 1/32.

Therefore, Shikakura, Owashi, and Takahashi, in combination or individually, fail to teach or suggest a block segmenting element configured to segment the audio signal into a plurality of blocks, where each block is of a predetermined length selected to provide a maximum recordable time on the recording medium and a maximum encryptable data length of the digital audio signal.

Based on the foregoing discussion, it is submitted that claims 3, 10, and 17 are not rendered obvious by the teachings of Shikakura, Owashi, and Takahashi, individually or in combination. Accordingly, it is submitted that the Examiner's rejection of claims 3, 10, and 17 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

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§103 Rejection of Claims 4, 11, and 18

In Section 7 of the Office Action, claims 4, 11, and 18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Shikakura in view of Owashi, and further in view of Shimoi *et al.* (U.S. Patent No. 5,652,857; hereinafter referred to as "Shimoi").

Since claims 4, 11, and 18 depend from claims 1, 8, and 15, respectively, claims 4, 11, and 18 include all the limitation of claims 1, 8, and 15. Based on the foregoing discussion regarding claims 1, 8, and 15, claims 4, 11, and 18 should be allowable over the combination of Shikakura and Owashi. Further, it was indicated that Shimoi discloses multiple data block of multimedia with 16 kilobytes.

Therefore, Shikakura, Owashi, and Shimoi, in combination or individually, fail to teach or suggest a block segmenting element configured to segment the audio signal into a plurality of blocks, where each block is of a predetermined length selected to provide a maximum recordable time on the recording medium and a maximum encryptable data length of the digital audio signal.

Based on the foregoing discussion, it is submitted that claims 4, 11, and 18 are not rendered obvious by the teachings of Shikakura, Owashi, and Takahashi, individually or in combination. Accordingly, it is submitted that the Examiner's rejection of claims 4, 11, and 18 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

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CONCLUSION

In view of the foregoing, entry of this amendment and the allowance of this application with claims 1-21 are respectfully solicited.

In the event that additional cooperation in this case may be helpful to complete its prosecution, the Examiner is cordially invited to contact Applicant's representative at the telephone number written below.

The Commissioner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account 50-0320.

Respectfully submitted,
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